REMARKS

In the captioned application, claims 26-205 are pending. Claims 26-169 and 178-205, directed to non-elected subject matter, are withdrawn. Applicants reserve the right to file the subject matter of the non-elected claims in one or more divisional applications. Without acquiescing to the propriety of the Examiner's rejections, Applicants amended claim 170, 172, 175, and 176 to clearly set forth the nature of the claimed invention. The foregoing amendments do not introduce new matter to the application, so entry thereof by the Examiner is respectfully requested.

Upon entry of these amendments, claims 170-177 will be pending. In view of the foregoing revisions and following remarks, Applicants earnestly request the reconsideration and withdrawal of the objections and rejections.

Abstract

Applicants submit a copy of an abstract of the invention at the end of the reply.

Priority

The present application is a U.S. national stage application filed under 35 U.S.C. § 371. As indicated in Form PCT/DO/EO/905, mailed May 4, 2001, the priority document has been submitted to the United State Patent and Trademark Office either by the Applicants or the International Bureau. Accordingly, Applicants have fulfilled the requirement for a certified copy of the foreign priority application under 35 U.S.C. § 119(b).

Arrangement of the Specification

Applicants have provided section headings in accordance with 37 C.F.R. § 1.77(b).

Claim Objection

Applicants have amended claim 170 by adding commas in the appropriate locations of the claim. Accordingly, the objection is rendered moot.

Double Patenting

Applicants have amended claims 170 and 172. Applicants submit that dependent claims 171 and 172 are further limitations of claim 170. Accordingly, the rejection should be withdrawn.

Rejection Under 35 U.S.C. § 101

The Examiner rejected claims 170-177 on the basis that these claims lack patentable utility.

The Examiner alleges that the specification fails to teach a polypeptide encoded by SEQ. ID No. 13 having the biological activity of a syntaxin either explicitly or implicitly. He further alleges that the "only immediate apparent utility" for the claimed DNA would be "further scientific characterization as a putative syntaxin." Applicants respectfully traverse the above rejection.

Under the USPTO Utility Examination Guidelines, a patent application satisfies the "utility" requirement, if the inventor(s) discloses how to use the purified gene isolated from its natural state. Fed. Register 66:1092-1099, January 5, 2001. In addition, where an application discloses a specific, substantial, and credible utility for the claimed and isolated gene, the isolated and purified gene composition or nucleotide sequence is patentable. The Guidelines consider that an isolated and purified DNA molecule may meet the statutory utility requirement if, for example, it can be used to "produce a useful protein." The Guidelines emphasizes the disclosure of <u>at least one</u> specific, substantial and credible utility.

In addition, when referring to the *per se* rule relating to homology-based assertions of utility, the Guideline states:

> "A patent examiner must accept a utility asserted by an applicant unless the Office has evidence or sound scientific reasoning to rebut the assertion. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The examiner's decision must be supported by a preponderance of all the evidence of record. More specifically, when a patent application claiming a nucleic acid asserts a specific, substantial, and credible utility, and bases the assertion upon homology to existing nucleic acids or proteins having an accepted utility, the asserted utility must be accepted by the examiner unless the Office has sufficient evidence or sound scientific reasoning to rebut such an assertion. "[A] rigorous

> correlation need not be shown in order to establish practical utility; 'reasonable correlation' is sufficient." Fujikawa v. Wattanasin, 93 F.3d 1559, 1565, 39 USPQ2d 1895, 1900 (Fed. Cir. 1996)."

In view of the above argument, Applicants enclose a sequence alignment of the claimed TSAP 21 and syntaxin 11 genes (see enclosed attachment). As shown, TSAP 21 gene is shorter than syntaxin 11 but is identical to syntaxin 11 (see specification at Table 1, page 15). Syntaxin 11 has a role in regulating intracellular trafficking, distribution, and restriction of molecules to specific membrane compartments. Because of its sequence similarity with syntaxin, the claimed TSAP 21 gene may have similar functions with syntaxin. However, the inventors of the instant application discovered that TSAP 21 is differentially expressed in tumor revertant cell lines (e.g., KS cells having a suppressed transformed phenotype). See specification at page 17-18).

In addition, Applicants have amended claim 170 to encompass the entire nucleotide sequence of SEQ ID NO:13 that encodes TSAP 21. As revised, claim 170 recites that apoptosis or tumor suppression induces the expression of TSAP 21.

Furthermore, the specification teaches that the absence of TSAP 21 is indicative of cancer susceptibility (specification at page 4, lines 10-25). It can therefore be used as a cancer marker. Its expression is induced during p53- or p21-induced apoptosis and/or tumor suppression. The specification and amended claims also disclose how the nucleotide sequence of SEQ ID NO:13 can be used as a nucleotide probe, an amplification primer, or a diagnostic agent for determining the predisposition of cancer. Accordingly, a specific, substantial and credible use is disclosed in the claimed invention. Therefore, in view of the above arguments, reconsideration and withdrawal of the rejection is respectfully requested.

Rejection Under 35 U.S.C. § 112, First Paragraph

The Examiner further rejected claims 170-177 under 35 U.S.C. § 112, first paragraph, on the ground that the claims are not enabled in view of the lack of teachings, such as, an undisclosed protein function, lack of an association with any disease, and that the function of Syntaxin 1 cannot be attributed to TSAP 21. Based on the above assertions, it would allegedly require undue experimentation to practice the claimed invention according to the rejection. Applicants respectfully traverse this rejection.

An applicant's specification that contains a teaching of how to make and use the invention must be taken as enabling unless the examiner provides sufficient reason to doubt the accuracy of the disclosure. *In re Marzocchi*, 439 F.2d 220, 223-224 (C.C.P.A. 1971); *In re Brana*, 34 USPQ2d 1437, 1441 (Fed. Cir. 1995). The Examiner has come forward with no objective evidence to support a contention that the present invention as described in the specification, could not be made and used as described by one of the ordinary skill in the art. Thus, Applicants' specification is presumed to be enabled.

Arguments presented in overcoming the section 101 rejection are incorporated herein in their entirety.

Rather than recognizing Applicants' presumption of enablement, the burden to positively prove enablement is being shift to the Applicants. As taught in the specification, however, the absence of TSAP 21 is indicative of cancer susceptibility (specification at page 4, lines 10-25). It can therefore be used as a cancer marker. Its expression is induced during p53- or p21-induced apoptosis and/or tumor suppression. In view of these statements, the PTO cannot hold the application non-enabling in the absence of specific reasons and supporting evidence that would cast a doubt on the specification.

Accordingly, Applicants submit that the specification is enabling, and it is unnecessary for a skilled artisan to engage in undue experimentation. Therefore, reconsideration and withdrawal of the rejection is respectfully requested.

Rejection Under 35 U.S.C. § 112, Second Paragraph

The Examiner contends that claims 170-177 are indefinite for the reasons set forth in page 10 of the present Office Action (Paper No. 11).

Applicants have revised claim 170 by qualifying the "wherein" clause to recite that "apoptosis or tumor suppression induces the expression of TSAP 21." This amendment provides clarity in the TSAP 21 function

Original claim 171 and amended claim 172 are further limitations of claim 170.

Claim 175, as amended, is definite without the recitation of the phrase "said virus."

Claim 176, as amended, recites a "plasmid." It no longer recites "a naked nucleic acid vector.

In view of the above remarks and foregoing amendments, Applicants respectfully request that reconsideration and withdrawal of the rejection.

CONCLUSION

In view of the foregoing remarks, Applicants urge that the present claims are in condition for allowance. Should there be any questions regarding this application, the Examiner is invited to contact the undersigned at the telephone number shown below.

Respectfully submitted,

Date May 15, 2003 By Stephen B. Maebius

FOLEY & LARDNER
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5143
Telephone: (202) 672-5569
Facsimile: (202) 672-5399

Stephen B. Maebius
Attorney for Applicant
Registration No. 35,264

ABSTRACT OF THE INVENTION

The invention relates to genes involved in the molecular paths for tumour suppression and/or resistance to viruses, and wherein cell expression is particularly induced or inhibited during apoptosis and/or tumour suppression.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claim 170 (currently amended): An isolated DNA molecule encoding TSAP 21, said isolated DNA molecule consisting of the nucleotide sequence of SEQ ID NO:13, wherein apoptosis or tumor suppression induces the expression of said TSAP 21 [is induced during apoptosis or tumor suppression].

Claim 172 (currently amended): The isolated DNA molecule according to claim 170, wherein the expression of said TSAP 21 is activated by [transfectants selected from the group consisting of] p21 [transfectants], TSAP 3 [transfectants,] and anti-sense TSIP 2 [transfectants].

Claim 175 (currently amended): The vector of claim 174, wherein said [virus] viral vector is [an adenovirus, a retrovirus, a herpesvirus or a poxvirus] adenoviral, retroviral, herpesviral or poxviral.

Claim 176 (currently amended): The vector of claim 173, wherein said vector is a [naked nucleic acid vector] plasmid.